

L 10951-66

ACC NR: AP6002286

pycrylhydrazyl in a constant magnetic field  $H_0$ . In some of the experiments the pumping frequency  $\omega_1/2\pi$  was in the range of 10 Gcps and the signal frequency  $\omega_2/2\pi$  was varied from 10 to 20 Mcps. Measurements were obtained both in continuous and pulsed operation modes. In other experiments the pump and signal frequencies were 25 Mcps. The experimental and theoretical data showed that calculations of Raman effects in a two-level system were correct. It was shown that when the ratio of the intensity of stimulated Raman scattering to the general resonance absorption is small, the effect cannot be used for amplification of superhigh-frequency signals. In case of amplification during saturation, this effect can be used for amplification in the cm and especially in the mm ranges. [JA]  
Orig. art. has: 8 formulas and 3 figures.

SUB CODE: 30, 17 / SUBM DATE: 26Jun64 / ORIG REF: 006 / OTH REF: 015 /  
ATD PRESS: 4/70

Roman Laser 25,44

BC

Card 2/2

L 11123-66 EWT(1)/EWP(e)/EWT(m)/EWA(h) WH

ACC NR: AP6002710

SOURCE CODE: UR/0056/65/049/006/1723/1727

AUTHOR: Klyshko, D. N.; Penin, A. N.; Tumanov, V. S.

ORG: none

TITLE: Frequency subtraction by means of a three-level system

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1723-1727

TOPIC TAGS: nonlinear optics, multiphoton process, three level system, harmonic generation, frequency subtraction, frequency fixer, ruby single crystal, maser

ABSTRACT: Resonance subtraction of two  $\delta H$  frequencies ( $\lambda \sim 3$  cm) by means of a three-level quantum system was investigated theoretically using graphical methods, and experimentally using ground-state spin levels of a ruby single crystal. The experiment was carried out on a ruby single crystal with a volume of  $0.15 \text{ cm}^3$  and a 0.02% concentration of chromium ions. The three lower Zeeman levels were used. To permit all transitions, a constant magnetic field ( $H = 625$  oe) perpendicular to the crystal axis was used. The cylindrical ruby crystal was placed in a rectangular cavity where it was pumped by the  $H_{011}$  and  $H_{101}$  modes with frequencies corresponding to 10.22 and 10.15 Gcps, respectively. A coil with  $Q = 20$  was wound around the specimen and tuned at 70 Mcs to the resonant amplifier. The maximum output power at the resultant (difference) frequency  $P_3$  was of the order of  $2 \cdot 10^{-14}$  w, while the

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ACC NR: AP6002710

power of the heterodyne signal was of the order of 50 Mw. The dependence of  $P_3$  on the angle between the field and the crystal axis was also investigated. The experimental results confirmed the basic theoretical predictions and indicated the possibility of producing resonant mixers based on quantum systems with three discrete energy levels which would convert SHF signals into IF signals. Such signal conversion can be enhanced considerably by suitable selection of the optimal quantum system (solid-state and/or gaseous), cooling the working medium, and incorporating resonant networks with higher Q's. Orig. art. has: 3 formulas and 3 figures. [YK]

SUB CODE: 20/ SUBM DATE: 05Jul65/ ORIG REF: 004/ OTH REF: 003/ ATD PRESS: 4176

Card 2/2

KLYSHKO, D.N.; TUMANOV, V.S.; YARYGIN, V.P.

Subtraction of the frequency in a two-level system. Vest. Mosk.un.  
Ser. 3: Fiz., astron. 20 no.4:89-90 J1-Ag '65.

(MIRA 18:17)

1. Kafedra radiotekhniki Moskovskogo gosudarstvennogo universiteta.  
Submitted February 1, 1965.

L 45094-66 EWT(m)/T  
 ACC NR: AP6024885 SOURCE CODE: UR/0056/66/051/001/0241/0249  
 AUTHOR: Tumanov, V. S. 63  
 ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet) 8  
 TITLE: Interaction of magnons with photons and phonons 14  
 SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v.51, no.1, 1966, 241-249  
 TOPIC TAGS: magnon, phonon, ~~laser~~, magnetostriction, PHOTON, LASER RADIATION  
 ABSTRACT: Interaction between magnons and photons and magnons and phonons in which virtual magnons are involved is considered. The diagram technique involving magnon causal functions is used in the calculations. Characteristics of photon decay into a photon and magnon are calculated. It is suggested that the process may be detected by irradiating ferrites with a laser beam. A quantum interpretation of indirect phonon instability is presented and a calculation is presented of the corresponding matrix elements for an arbitrary direction of motion and all three phonon polarizations. Orig. art. has: 27 formulas. [CS]  
 SUB CODE: 20/ SUBM DATE: 24Jan66/ ORIG REF: 007/ OTH REF: 006  
 Card 1/1 blg

RYBALKIN, G.I., inzh.; SHARAPOV, V.A., inzh.; VELIKIY, I.G., inzh.;  
MALIOVANOY, D.I., doktor tekhn. nauk; PRUZHNIER, V.L., inzh.;  
KONDORSKIY, R.L., inzh.; TUMANOV, V.Ya., inzh.; POGORELOV,  
A.K., kand. tekhn. nauk

The BUKS-I equipment is an important step in the accomplishment  
of overall mechanization of shaft sinking. Shakht. stroi. 9 no.2:  
1-3 F '65. (MIRA 18:4)

1. Kombinat Luganskshakhtostroy (for Rybalkin, Sharapov, Velikiy).
2. Tsentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy  
institut podzemnogo i shakhtnogo stroitel'stva (for Maliovanov,  
Pruzhnier, Kondorskiy, Tumanov, Pogorelov).

GOLOVACHEV, V.F.; TUMANOV, V.Ye.

Using electric steam boilers in hotel laundries.. Gor.khoz.Mosk.  
35 no.5:36-37 My '61. (MIRA 14:6)  
(Boilers) (Laundry industry)

GRISHANIN, Kirill Vladimirovich; TUMANOV, V.V., retsensent; GILYAROV,  
N.P., red.; VOLCHOK, K.M., tekhn. red.

[Hydraulics]Gidravlika. Izd.2., perer. Leningrad, Izd-vo  
"Rechnoi transport," 1962. 268 p. (MIRA 16:3)  
(Hydraulics)



TUMANOV, Yu.

The "secret" of popularity. Vnesh. torg. 43 no 17:16-17 '63.  
(MIRA 16:8)

(Leningrad--Printing machinery)

TUMANOV, Yu.

Maintaining high technical standards. Vnesh. torg. 43 no. 9:  
34-36 '63. (MIRA 16:10)

BERMAN, L.D., doktor tekhn.nauk, prof.; TUMANOV, Yu.A., inzh.

Studying the heat transmission in case of the moving steam  
condensation on a horizontal tube. Teploenergetika 9 no.10:  
77-83 0 '62. (MIRA 15:9)

1. Vsesoyuznyy teplotekhnicheskii institut.  
(Heat—Transmission)

SEME NOV, P.A., prof., doktor tekhn.nauk; MATROZOV, V.I., kand.tekhn.nauk;  
TUMANOV, Yu.V., inzh.

Effect of some geometric parameters on the resistance and mass  
transfer in a jetless Venturi absorber. Khim.mash. no.5:16-18  
S-O '60. (MIRA 13:9)

(Absorption) (Mass transfer)

ARTAMONOV, D.S.; ORLOV, B.N.; TUMANOV, Yu.V.

Determining the coefficients of mass transfer during absorption.  
Khim. i tekhn. topl. i masel 10 no.10:15-16 O '65.

(MIRA 18:10)

1. Moskovskiy institut khimicheskogo mashinostroyeniya.

MATROZOV, V.I., kand.tekhn.nauk; SEMENOV, P.A., doktor tekhn.nauk, prof.;  
TUMANOV, Yu.V., inzh.

Hydraulics and mass transfer in a jetless Venturi absorber. Khim.  
mash. no. 3:11-14 My-Je '60. (MIRA 14:5)  
(Absorption) (Mass transfer)

S/184/60/000/005/014/021/XX  
A104/A026

AUTHORS:      Semenov, P.A., Profossor, Doctor of Technical Sciences; Matrozov,  
                 V.I., Candidate of Technical Sciences; Tumanov, Yu.V., Engineer

TITLE:        The Influence of Some Geometric Parameters on Resistance and Mass  
                 Transfer in the Jetless Venturi Tube

PERIODICAL:   Khimicheskoye mashinostroyeniye, 1960, No. 5, pp. 16 - 18

TEXT:        The article is a continuation of an earlier paper on the hydraulics  
and mass transfer in the Venturi tube (Ref. 1, V.I. Matrozov, P.A. Semenov and  
Yu.V. Tumanov, Khimicheskoye mashinostroyeniye, 1960, No. 3). The present paper  
deals with the influence of the conic shape of confusers and diffusers on the hy-  
draulic resistance and mass transfer in the jetless Venturi tube. Performance  
tests on tubes with confuser taper angles of 17, 31 and 61° showed, that taper  
angles bear no effect on hydraulic resistance or mass transfer, nor depend on  
thom the transition from pulsating to steady process. Hydraulic tests on tubes  
with diffuser taper of 8, 17 and 30° revealed that whatever this taper may be,  
there are always two hydraulic processes - pulsating and steady - with a transi-  
tion zone between them. A comparison of data obtained at similar gas velocity

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Card 1/3

S, 184/60/000/005/014/021/XX  
A104/A026

The Influence of Some Geometric Parameters on Resistance and Mass Transfer in the Jetless Venturi Tube

of 57.0 m/sec shows fluctuations of the mass transfer coefficient caused by increased taper of the diffuser. Further tests concerned the selective determination of the ammonia content in liquid (film) on the diffuser surface and in diffused liquid suspended in the gas flow. It was established that there is an equal amount of ammonia in both. At high ratios of  $\frac{L}{G}$  the content of ammonia in the film on the diffuser walls decreased by 5 - 7%. The mass transfer occurs primarily during the formation of the two-phase flow which is confirmed by Johnstone (Ref. 2). Therefore, power losses caused by the friction between the flow and the liquid film are of no consequence and decrease at growing taper of the diffuser. At high ratios of  $\frac{L}{G}$ , when friction losses determine the full resistance of the apparatus, an increased taper of the diffuser leads to an intensified mass transfer, whereas the power consumption remains unchanged. Tube No. 1 was subjected to three series of tests on the influence of the absolute absorption volume  $V$  behind the Venturi tube on mass transfer and extraction coefficients. The velocity of the air-ammonia mixture was  $V = 72.5$  m/sec constant, the irrigation  $\frac{L}{G}$  fluctuated between 0.67 - 4.90 l/nm<sup>3</sup>. The volume of absorption was

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S/184/60/000/005/014/021/XX  
A104/A026

The Influence of Some Geometric Parameters on Resistance and Mass Transfer in the Jetless Venturi Tube

0.00169, 0.0159 and 0.0318 m<sup>3</sup>. The volume of the Venturi pipe was 0.0028 m<sup>3</sup>. There are 6 figures, 1 table and 2 references: 1 English and 1 Soviet.

Card 3/3

SEMENOV, P.A., doktor tekhn.nauk; TOMANOV, Yu.V.; CHEKHOV, O.S., kand.tekhn.  
nauk

Jetless Venturi absorber for the absorption of ammonia from coke-  
oven gas. Koks i khim. no.8:34-37 '60. (MIRA 13:8)

1. Moskovskiy institut khimicheskogo mashinostroyeniya.  
(Ammonia) (Coke-oven gas) (Absorption)

GUREVICH, A.Ye.; KUZOVLEVA, O.B.; TUMANOVA, A.Ye.

Production of protein-cellulose complexes (immunosorbents) in suspensions with the capacity for binding large amounts of antibodies. Biokhimiia 26 no.5:934-942 S-O '61. (MIRA 14:12)

1. Laboratory of Pathology of Protein Metabolism and Immunochemistry,  
Institute of Biological and Medical Chemistry, Academy of Medical  
Sciences of the U.S.S.R., Moscow.  
(SORBENTS) (ANTIGENS AND ANTIBODIES)

TUMANOVA, D.F.; CHOCHIA, N.S.

Phenological observations and land-form investigations. Vest.  
LGU 14 no.18:82-89 '59. (MIRA 12:8)  
(Phenology) (Physical geography)

KISHKIN, S.T.; POLYAK, E.V. Prinimali uchastiye: ROVENSKIY, G.M. [deceased];  
IGNATOVA, I.A.; TRUSOVA, Ye.F.; TUMANOVA, G.I.

Kinetics of the failure of heat-resistant alloys during the creep  
process. Issl. po zharopr. splav. 7:295-308 '61. (MIRA 14:11)  
(Heat-resistant alloys--Testing) (Creep of metals)

ORG: Institute of Microbiology, AN SSSR, Moscow (Institute micro-  
biologii AN SSSR)

TITLE: Use of a method of studying virus inclusions in tissue culture  
and isolated plant cell experiments designed to investigate interactions  
between viruses and their host plants

SOURCE: UR/0216/66/000/005/0760/076  
760-766 AN SSSR. Izvestiya. Seriya biologicheskaya, no. 5, 1966,

TOPIC TAGS: plant physiology, plant injury, plant disease,  
host plant, virus, plant disease virus, virus inclusion, *PLANT*

ABSTRACT: Experiments were conducted to determine to what degree and  
under what conditions the study of viral particle relationships in plant cells  
facilitates analysis of the individual cells. Kazakh-strain TMV, both  
in tissue cultures and in host cells of tested calluses and, frequently, in  
sions were found in 50% of individual cells of the kinds of inclusions for use  
verage, in every fifth cell of the kinds of inclusions for use in the cellular cy-  
undance, and diversity of the kinds of inclusions for use in the cellular cy-  
plasm and nucleus may be useful indicators for use in the cellular cy-

UDC: 632.3

ACC NR: AP6031b

tissue culture s  
cells possess uni  
long periods in dea  
were not only  
the cells in nutrit  
ply. Factors such  
ence on inclusion formati  
term in vitro observations  
suggest that in some cases th  
cell activity. Large aggregat  
sions of Kazakh-strain TMV can c  
impairing normal intracellular me  
method is that tissues can be studi  
prepared for electron microscopy.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757420013-1

W.A. 50

JTH REF: 006

SUB CODE: 06/ SUBM DATE: 16Nov65/ ORIG

Card 2/2

TUMANYAN, M.A.; IZVEKOVA, A.V.

Effect of the administration of a bone marrow suspension on  
the immunity of irradiated animals. Med.rad. 4 no.7:52-59  
J1 '59. (MIRA 12:9)

1. Iz otdela radiatsionnoy mikrobiologii i immunologii (zav. -  
prof.V.L.Troitskiy) Instituta epidemiologii i mikrobiologii  
imeni N.F.Gamalei AMN SSSR.

(RADIATION PROTECTION)  
(BONE MARROW extracts)

TUMANOV, S.S., professor, doktor tekhnicheskikh nauk; KIRILLOVA, M.G.

Effect of individual methods of processing batches upon the properties  
of porcelain. Stek. i ker. 12 no.2:23-26 F '55. (MIRA 8:4)  
(Porcelain)



TUMANOV, S.YA  
TUMANOV, S.Ya., master obmurovochnykh rabot

To assist lining workers in sulfite pulping plants. Bum.prom.32  
(MIRA 10:12)  
no.9:25 S '57. (Woodpulp industry--Equipment and supplies)

PA 10T1

TUMANOV S. YA.

USSR/Brick  
Boilers

Mar/Apr 1947

"Brickwork in Boilers," S. Ya. Tumanov, 3 pp

"Bumazhnaya Promyshlennost'" Vol XXII, No 3

Technical discussion of type of brick which is  
best for boilers used in manufacture of sulfide  
cellulose.

10T1

08

PROCESSING AND PROPERTIES INDEX

Lining of digesters for sulfite pulping. S. Ya. Tumanyan. *Bumazhnyy Prom.* 16, No. 4, 13-17 (1988). The tech. progress made in the Soviet Union in the art of ceramic lining of pulp digesters is discussed. Directions for the operation are given. Chas. Blanc

23

ASS. ILLA METALLURGICAL LITERATURE CLASSIFICATION

02-1

1. TUMANOV, S. YA.
- 2, USSR (600)
- 4, Paper-Making Machinery
7. Assembly and maintenance of the lining of digesters. Bum.prom. 27 no. 9, 1952.

9. Monthly List of Russian Accessions. Library of Congress, February 1953, Unclassified.

TUMANOVA, S.Yu.

Quantitative determination of gangliosides in the brain. Nerv.  
slst. no.5:22-28 '64. (MIRA 18:3)

1. Laboratoriya obmena veshchestv Leningradskogo gosudarstvennogo  
universiteta.

FLIS, I.Ye.[deceased]; TUMANOVA, T.A.; GRAD, N.M.; AL'SHITS, I.M.;  
DMITRIYEVA, A.N. *Prinimati uchastiye*: GLADKAYA, L.A.; MUDROV,  
O.A.; ZUBOVA, G.N.

Effect of water on polyester resins and glass plastics based on  
same. Plast.massy no.10:33-36 '64. (MIRA 17:10)

L 24197-66 EWT(m)/EWP(t) IJP(c) JD/WB

ACC NR: AP6013314

SOURCE CODE: UR/0413/66/000/008/0124/0124

INVENTOR: Tumanova, T. A.; Andreyeva, V. V. 76  
B

ORG: none

TITLE: Protection of titanium against corrosion in mineral acids with inhibitors.  
Class 48, No. 180938 18 27 18

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 124

TOPIC TAGS: corrosion, titanium corrosion, corrosion inhibition, corrosion inhibitor

ABSTRACT: This Author Certificate introduces a method of inhibiting titanium corrosion in mineral acids. In order to increase the effectiveness of the protection and reduce the harmfulness of the process, 0.05—0.30 wt% nitric acid or nitrides are added, depending on the acid concentration. [WW] 4

SUB CODE: 11, 13/ SUBM DATE: 15Jun63/ ATD PRESS: 4245

Card 1/1

UDC: 620.197.3:669.295

**"APPROVED FOR RELEASE: 03/14/2001**

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**APPROVED FOR RELEASE: 03/14/2001**

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PROCESSING AND PRESENTATION INDEX																									
1ST AND 2ND COLUMNS													3RD AND 4TH COLUMNS												
SA													B 64 u												
621.331(47)																									
4156. The development of the power economy of the Moscow Metropolitan.																									
V. A. Tumanov, B. G. Gurvich and E. I. Bykov. Elektrichestvo (No. 7)																									
23-9 (July, 1950) In Russian.																									
A general review covering substations, protection (differential-current, potential-current and differential-impulse protection), telecontrol and telemetering, the cable system, maintenance and breakdown experience, lighting: general power economy: organization and rationalization: co-operation with industry and research organizations. B. F. KRAUS																									
ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION																									

TUMANOV, V.A., inzhener, redaktor; GERONIMUS, B.Ye., kandidat tekhnicheskikh nauk, redaktor; KHITROV, P.A., tekhnicheskii redaktor.

[Electric systems for subways; operation, repair, and adjustment]  
Elektrosnabzhenie metropolitenov; ekspluatatsiia, remont i naladka.  
Moskva, Osh. transp.zhel-dor.izd-vo, 1957. 419 p.

(Moscow—Subways)

(MLRA 10:6)

TUMANOV, V.,dots.

Electric steam boilers for use in construction. ~~Ma~~ stroi.  
Mosk. no.1:20 Ja '59. (MIRA 12:1)

1. Moskovskiy energeticheskiy institut.  
(Boilers)

TUMANOV, V. A., Eng.

PA 164T13

USSR/Electricity - Power Systems  
Subways

Jul 50

"Development of the Moscow Subway Power System,"  
V. A. Tumanov, V. G. Gurvich, E. I. Bykov, En-  
gineers, Moscow Subway imeni Kaganovich

"Elektrichestvo" No 7, pp 23-29

Describes development and improvement of Moscow  
subway power system over 15 years. Gives opera-  
tional data on substation equipment, electric  
networks, automatic devices, telecontrol, and  
protection. Details work done by number of Mos-  
cow plants, research institutes and organiza-  
tions.

FDD

164T13

TOMANOV, V.I., inzh.; MURATOV, I.I., inzh.

Experimental investigation of a synchronous motor with an externally completed flux path. Vest. elektrom. 29 no.3:30-36 Mr '58.

(MIRA 11:4)

1. Nauchno-issledovatel'skiy institut elektromyashlennosti.  
(Electric motors, Synchronous)

TUMANOV, V.I.

AUTHORS: Tumanov, V.I., Engineer, and Kuratov, I.I., Engineer. 110-3-6/88

TITLE: An Experimental Investigation of a Synchronous Motor with an Externally-closed Magnetic Circuit (Issledovaniye sinkhronnogo dvigatelya s vneshezaslannutym magnitnym potokom)

PERIODICAL: Vestnik Mashinostroyeniya, 1956, vol.29, No.3, pp. 30 - 36 (USSR).

ABSTRACT: For certain types of drive, synchronous motors are required that have neither sliprings nor rotor windings. Types available for such application include those with permanent magnets, reaction motors, hysteresis motors and motors with the magnetic circuit externally closed. This latter type was invented by A.G. Iosif'yan and V.I. Tumanov in 1955. High-power motors of this type with good characteristics are feasible, but as their properties and characteristics have not been studied, such motors have not been built. Accordingly, an experimental investigation was made on a motor with magnetic circuit externally closed, and having the following characteristics: power 500 W, current 1.66 A, line voltage 220 V, speed 3 000 r.p.m., power factor 1.0, field current 3.2 A and field voltage 15.2 V.

Card1/5 The electric motor with externally-closed magnetic circuit is

110-3-6/20  
An Experimental Investigation of a Synchronous Motor with  
Externally-closed Magnetic Circuit

a development of the contactless selsyn which has been developed in the USSR. It is a synchronous machine with alternating current system having salient poles and the starting properties of an induction motor. The magnetic circuit is not closed within the machine as in the usual synchronous motor, but axially through additional air-gaps and an external magnetic circuit. The path of the magnetic lines of force is shown in Fig.1, from which it will be seen that the excitation flux is linked with the 3-phase stator winding as in an ordinary synchronous motor. A special feature of the motor is the absence of rotor windings. The magnetic circuit of the motor is formed by the stator, by a special rotor having two parts that are magnetically separated and by a stationary external magnetic path. The construction is illustrated schematically in Fig.1 and described. The components separating the two parts of the rotor, and two rings on the rotor, are made of non-magnetic conducting material which is in good contact with the rotor steel. These parts provide the necessary starting properties. The end rings are non-magnetic.

Card2/5 Synchronous operating conditions were first investigated, using



An Experimental Investigation of a Synchronous Motor with an  
Externally-closed Magnetic Circuit

110-3-6/22

independent excitation and rotor rings made of copper. The operating and excitation characteristics are given in Figs. 2. and 3: they show that the motor works stably on no-load with rated field current and has no tendency to fall out of step and drop load provided the field current is maintained. The efficiency figures given in Fig. 2 make no allowance for windage and excitation system losses. When this is done (considering germanium rectifiers) the motor efficiency is 0.79. The static overload capacity of the motor with rated field current is 50%. The results of dynamic stability tests are given in Fig. 4 in the form of oscillograms. Load was applied and removed by means of an electro-magnetic brake. The stator current variations are seen to be damped out quickly. The motor works stably at 0.9 rated voltage, and the test results indicate that it meets the main requirements applicable to synchronous motors.

In starting tests, the motor behaves like a salient-pole synchronous motor with solid poles. Magnetomotive force and stator field diagrams for the case when there is current only in the stator windings are given in Fig. 5. Air-gap flux measurements are plotted in Fig. 6. The operation of the motor

Card 3/5

An Experimental Investigation of a Synchronous Motor with an  
Externally-closed Magnetic Circuit 110-3-6/22

under asynchronous conditions may be analysed by the usual procedure for salient-pole synchronous motors. During the starting period, it is considered as two equivalent multi-winding transformers.

Various constructions of starting ring were tested in order to obtain the requisite starting characteristics. When the rotor has no copper rings, it behaves as though it had an incomplete damper winding formed by the solid poles and the common cylindrical part which unites them. If the space between the two magnetic parts of the rotor is filled with conducting material solidly connected to the rotor steel, the rotor behaves as though it had a complete damper winding. A number of different rotor constructions were tested and gave the torque/slip curves of Fig.7, which show that the best starting characteristics are obtained with complete short-circuiting copper rings on the rotor. The influence of the field windings on the starting characteristics was investigated. Torque/slip curves for rotors with and without copper rings with various conditions in the field circuit are given in Fig.8. The conditions of pulling into synchronism were investigated. The corresponding oscillograms are given in Fig.9 and show that the motor pulls into step with

Card4/5

110-3-6/22

An Experimental Investigation of a Synchronous Motor with an  
Externally-closed Magnetic Circuit

load on the shaft at rated field current if rotating at or above 95% of synchronous speed. Other starting conditions are also given. Behaviour during the starting period is seen to be analogous with that of an ordinary salient-pole motor. A motor that falls out of step because of short-term overload or reduced voltage pulls into step again when normal conditions are restored. The heating conditions are not severe when the motor runs synchronously and there is no need to provide special protection against this condition.

It is concluded that the construction of motors with externally-closed magnetic circuit will make possible submersible and explosion-proof synchronous motors and also motors with liquid cooling of the windings, for which it is necessary to have a cylinder of insulating material in the gap.

There are 9 figures and 7 Russian and 1 German references.

ASSOCIATION: NII EP

SUBMITTED: September 5, 1957

AVAILABLE: Library of Congress

Card 5/5

1. Syncros-Analysis 2. Syncros-Operation 3. Syncros-Excitation

VOSKANYAN, A.V.; KLYSHKO, D.N.; TUMANOV, V.S.

Frequency transformations in quantum systems with discrete  
energy levels. Zhur. eksp. i teor. fiz. 45 no.5:1399-1407  
N '63. (MIRA 17:1)

1. Moskovskiy gosudarstvennyy universitet.

69453

S/139/60/000/01/027/041  
E032/E414

9.3130

AUTHORS: Ternov, I.M. and Tumanov, V.S.

TITLE: On the Motion of Polarized Electrons in a Magnetic Field <sup>2!</sup>

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,  
1960, Nr 1, pp 155-163 (USSR)

ABSTRACT: It is well known that the effect of electromagnetic fields on the motion of a polarized electron beam can, in the general case, be reduced to a change in the momentum and the direction of the spin vector. In the case of a purely magnetic field, this change takes place in such a way that the component of the spin vector in the direction of motion is conserved. The situation is however complicated by the interaction of the electron with the electromagnetic vacuum. This leads to an additional energy which should be included in the generalized Dirac equation. A consideration of the effect of the vacuum interaction energy shows that in the non-relativistic approximation, the electron has a vacuum magnetic moment (in addition to the Bohr magneton) so that the Hamiltonian in the generalized Dirac

Card 1/3

69453

S/139/60/000/01/027/041  
E032/E414

On the Motion of Polarized Electrons in a Magnetic Field

equation for an electron in the magnetic field is of the form given by Eq (3). The presence of the additional vacuum moment leads to the fact that the change in the momentum vector and in the spin direction, when the electron moves in a magnetic field, is such that the spin component in the direction of motion is no longer an integral of motion, since the operator ( $\sigma P$ ) no longer commutes with the Hamiltonian of the generalized Dirac equation. In this way, the original polarization of the electron beam gradually changes with time. The vacuum interaction plays the major part in the change in the polarization since the kinematic (non-vacuum) part of the magnetic moment is automatically taken into account by the Hamiltonian given by Eq (2) and has no effect on the polarization. The vacuum correction to the Dirac equation (Eq (3)) in the form of an additional field moment is only significant in the non-relativistic approximation. The relativistic problem must be considered separately and this is done in some detail in

Card 2/3

69453

S/139/60/000/01/027/041  
E032/E414

On the Motion of Polarized Electrons in a Magnetic Field

the present paper. The treatment given holds up to ultra-relativistic electron velocities. The derivation is given of radiational corrections to the Dirac equation, and the effective energy of interaction of an electron with vacuum is computed. An estimate is also given of the change in the orientation of the electron spin vector which is due to the vacuum interaction. The discussion is concluded with an example in which the electron moves in a direction perpendicular to the magnetic field. Acknowledgement is made to Professor A.A. Sokolov for discussion of the results obtained. There are 10 references, 6 of which are Soviet and 4 English.

ASSOCIATION: Moskovskiy gosuniversitet imeni M.V. Lomonosova  
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: July 23, 1959  
Card 3/3

TERNOV, I.M.; TUMANOV, V.S.

Radiation of a polarized "luminous" electron. Dokl. AN SSSR 124  
no.5:1038-1041 F '59. (MIRA 12:3)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
Predstavleno akademikom N.N. Bogolyubovym.  
(Electrons)



TUMANOV, V. S. Cand Phys-Math Sci -- "Polarization and vacuum effects <sup>assumed</sup> ~~connected~~  
with the motion of an electron in a magnetic field." Mos, 1961 (Min of Education  
RSFSR. Moskovskaya Oblast Ped Inst im N. K. Krupskaya). (KL, 4-61 , 185)

-45-

ACCESSION NR: AP4037588

S/0056/64/046/005/1755/1760

AUTHOR: Tumanov, V. S.

TITLE: Wave equation and magnetic moment of a particle with spin 2

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1755-1760

TOPIC TAGS: wave equation, magnetic moment, spin, relativistic particle

ABSTRACT: In order to check on the hypothesis advanced by F. J. Belinfante (Phys. Rev. v. 92, 997, 1953) that the maximum projection of the intrinsic magnetic moment for arbitrary spin is equal to  $e\hbar/2mc$ , a relativistic wave equation is tentatively derived in matrix form for a particle with spin 2 in a magnetic field. This equation confirms Belinfante's hypothesis, which is likely to be valid for higher spin values, too. Orig. art. has: 35 formulas.

Card 1/2

ACCESSION NR: AP4037588

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 29Oct63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: NP

NR REF SOV: 002

OTHER: 006

Card 2/2

TUMANOV, V.S.

Wave equation and magnetic moment of a particle with spin 2.  
Zhur. eksp. i teor. fiz. 46 no.5:1755-1760 My '64.

(MJRA 17:6)

1. Moskovskiy gosudarstvennyy universitet.

TERNOV, I.M.; TUMANOV, V.S.

Effect of vacuum fluctuations on the polarization of electrons  
moving in a magnetic field. Zhur.eksp.i teor.fiz. 37 no.4:  
1137-1139 0 '59. (MIRA 13:5)

1. Moskovskiy gosudarstvennyy universitet.  
(Electrons) (Magnetic fields)

SOKOLOV, A.A.; ~~TUMANOV, V.S.~~

Uncertainty relation and fluctuation theory. Zhur.eksp.i teor.fiz.  
30 no.4:802-803 Ap '56. (MLRA 9:8)

1. Moskovskiy gosudarstvennyy universitet.  
(Quantum theory) (Photons)

TUMANOV, V.S.

Effect of quantum fluctuation on electron motion. Vest. Mosk. un.  
Ser. mat., mekh., astron., fiz. khim., 12 no.5:105-110 '57.

(MIRA 11:9)

1. Kafedra statisticheskoy fiziki i mekhaniki Moskovskogo gosudarstvennogo  
universiteta.

(Quantum theory) (Electrons)

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1226  
 AUTHOR SOKOLOV, A.A., TUMANOV, V.S.  
 TITLE The Indetermination Relation and the Theory of Fluctuations.  
 PERIODICAL Zhurn. eksp. i teor. fis, 30, 802-803 (1956)  
 Publ. 4 / 1956 reviewed 6 / 1956

According to the authors' opinion, explaining the indetermination relation as an uncontrollable interaction between object and measuring device (BOHR, HEISENBERG, etc.) in no way describes the physical nature of this relation. Such an explanation leads to a subjective idealistic interpretation of micro-cosmic phenomena.

The authors at first make the attempt, on the basis of some examples, to develop a theory of the motion of the electron in which quantum effects are more or less considered to be the result of the peculiar influence of a certain quantity of virtual particles (which form a vacuum). The analogy between the quantum effects and the theory of fluctuations can, for example, be found on the occasion of an investigation of the radial oscillations in the theory of the "emitting electron".

According to A.SOKOLOV and I.TERNOV, Dokl.Akad.Nauk, 97, 283 (1954) the square of the amplitude of macroscopic radial oscillations increases in accordance with the theorem  $(\Delta R)^2 = R^2(1-q)^2(\Delta E/E)^2$ . The same quantum-like formula may, however, be found also in semiclassical manner by taking into account the statistically independent fluctuation forces in the classical equation of oscillations of the electron. The authors interpret the identity of both methods as a con-



Zurn.eksp. i teor.fiz, 30, 802-803 (1956) CARD 2 / 2

PA - 1226

nection between the quantum-like method and the theory of oscillations where the so-called MARKOV chains occur, i.e. the statistical independence of successive processes.

The authors endeavor to explain the quantum-like micro motion of the electron by the effect produced by fluctuations of virtual photons. Under the influence of the field of virtual photons the classical quantities  $x$  and  $p_x$  (momentum of the particle) become non-commutating operators, and in first approximation the same exchange relations as in the wave theory are obtained. If, for  $x$  and  $p_x$  the corresponding operator expressions are put, the energy levels for the harmonic oscillator are obtained. If a certain formula for the momentum is used, zero energy automatically contains the necessary terms of subtraction, and the finite quantity  $E_0 = (\hbar \omega_0/2) + (\hbar \omega_0^2 e^2 / 3\pi c^3 m) (\ln(3c^3 m / 2e^2 \omega_0) - 1)$  remains.

The first term is the known expression for zero energy without vacuum terms, and the second term is due to the influence of the vacuum. Similarity to the corresponding strictly quantum-electrodynamically derived formula is shown. Thus, the classical motion of an electron itself becomes quantumlike by interaction with the secondarily quantized field of the (really emitted or only virtual) photons.

INSTITUTION: Moscow State University.

TUMANOV, Veniamin Vasil'yevich; ZERNOV, S.A., inzh., retsenzent; IVANOV, V.Ye., inzh., retsenzent; SECHAVELEV, A.F., red.; VOLCHOK, K.M., tekhn.red.

[Investigation of rivers and lakes] Rechnye i ozernye izyskania.  
Leningrad, Izd-vo "Rechnoi transport," Leningr.otd-nie, 1960. 264 p.  
(MIRA 13:9)

(Hydrographic surveying)

TRUMANOV, V. Ye.

36062 Paroezhnikornaya kholodil'naya ustroystvo. Za ekonomiyu topliva, 1949,  
Noi 11, S. 33-34

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, 1949

1. KERTSELLI, L.I., professor; TUMANOV, V.Ye., kandidat tekhnicheskikh nauk

An electric steam boiler. Nauka i zhizn' 22 no.7:54-55 J1 '55.  
(Boilers) (MIRA 8:9)

TUMANOV, V. E.

PA 20T 46

USSR/Physics

Jul 1947

Gas Analyzers

Carbon Dioxide Equipment

"New Automatic Gas Analyzer for L. K. Yakimov's Carbon Dioxide Systems," L. K. Yakimov, V. E. Tumanov, 5 pp

"Za Ekonomiyu Topliva" Vol IV, No 7

Largely mathematical discussion, fully illustrated with diagrams and tables of operating data, concluding that the instrument satisfies requirements and can be recommended for production on any scale.

9(3),24(4)

AUTHORS:

Ternov, I. M., Tumanov, V. S.

SOV/20-124-5-21/62

TITLE:

On the Radiation of a Polarized Electron (Ob izlucheniі polyarizovannogo svetyashchegosya elektrona)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1038-1041 (USSR)

ABSTRACT:

The authors investigated the radiation of a polarized relativistic electron in a constant and homogeneous magnetic field. In this connection it is useful to demand that the wave function of the electron moving in the magnetic field  $A_x = -(1/2)yH$ ,  $A_y = (1/2)xH$ ,  $A_z = 0$  be a solution of the Dirac equation and, besides, an eigenfunction of the operator of the spin projection on the kinetic momentum:

$(\vec{\sigma} \vec{P})\psi = \vec{\sigma}(-i\hbar \vec{\nabla} + \frac{e}{c} \vec{A})\psi = \hbar \xi \psi$ . It is useful to make such a selection of the wave function because the orientation of the spin of the electron with respect to the direction of its motion in a magnetic field remains conserved. The steady solution of the Dirac equation in the system of coordinates  $r, \varphi, z$  is explicitly written down. An expression for the

Card 1/3

On the Radiation of a Polarized Electron

SOV/20-124-5-21/52

polarized radiation of the electron at its spontaneous transition from the initial to another state is written down. The matrix elements of the Dirac matrices are proportional to certain Laguerre-functions. The authors above all estimate the intensity of radiation at transitions with approximation of the polarization of spin. The intensity of the radiation which is connected with depolarization is much lower than the corresponding value for transitions with conservation of polarization. For the investigation of the angular distribution of radiation intensity the usual approximation of matrix elements must be carried out, and the above-mentioned expression for the intensity of the polarized radiation of the electron must be summated with respect to all harmonics and radial transitions. Next, rather long expressions are derived also for the integral intensity of radiation. The polarization of the electron manifests itself already in the terms of the order of magnitude  $\hbar$ , although the radiation with the re-orientation of spin is of the order  $\hbar^2$ . The authors thank Professor A. A. Sokolov and Professor D. D. Ivanenko for discussing the problem and its results. There are 7 Soviet references.

Card 2/3

On the Radiation of a Polarized Electron

SOV/20-124-5-21/62

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: October 31, 1958, by N. N. Bogolyubov, Academician

SUBMITTED: October 24, 1958

Card 3/3



5050. NEW AUTOMATIC GAS ANALYZER WORKING ON YAKIMOV'S CO<sub>2</sub> SYSTEM.  
Yakimov, L. K. and Tumanov, V. E. (Za Ekonomiyu Topliva (Fuel Economy),  
1947, N. 7, 10-17).

Fuel economy depends largely on systematic and reliable gas analysis in the boiler plant. The authors have invented a gas analyzer of which full details and diagrams are given. It is claimed that the appliance is very simple and easy to operate; it may be hung on the wall or housed in a control panel and gives CO<sub>2</sub> readings indicating the degree of combustion; it is suitable for manufacture in small numbers or on a large scale.

5050. NEW AUTOMATIC GAS ANALYZER WORKING ON YAKIMOV'S CO<sub>2</sub> SYSTEM.  
Yakimov, L. K. and Tumanov, V. E. (Za Ekonomiyu Topliva (Fuel Economy),  
1947, N<sup>o</sup>. 7, 10-17).

Fuel economy depends largely on systematic and reliable gas analysis in the boiler plant. The authors have invented a gas analyzer of which full details and diagrams are given. It is claimed that the appliance is very simple and easy to operate; it may be hung on the wall or housed in a control panel and gives CO<sub>2</sub> readings indicating the degree of combustion; it is suitable for manufacture in small numbers or on a large scale.

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

TUMANOV, Ya.K., knyaz'.

How a Russian naval office helped Paraguay in the war with  
Bolivia. Mor.zap. 12 no.1:42-50 Ap '54. (MLRA 7:8)  
(Paraguay--Navy)

TUMANOV, Ya.K., knyaz'.

How a Russian naval officer helped Paraguay in the war with  
Bolivia. Mor.zap. 12 no.2:51-58 J1 '54. (MLRA 7:8)  
(Paraguay--Navy)

TUMANOV, Ya.K., prince.

How a Russian naval officer helped Paraguay in the war with Bolivia. Mor.zap.  
11 no.3:59-64 H '53.

(MIRA 6:11)

(Chaco War, 1932-1935)

TUMANOV, YE.

Zheleznodorozhnoe stroitel'stvo na Manchzhurskom platsdarme. [Railroad construction in Manchuria). (Sots. transport, 1936, no. 5, p. 85-99, map).

DLC: HE7.S6

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

L 13271-66 EWT(1)/EWT(m)/EEC(k)-2/EWP(j)/T/EWP(k)/EWA(m)-2 IJP(c) VQ/RM  
ACC NR: AP6002715 SOURCE CODE: UR/0056/65/049/006/1764/1773

AUTHOR: Mash, D. I.; Starunov, V. S.; Tumanov, Ye. V.; Fabelinskiy, I. L.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: The intensity and width of the Brillouin components in liquids and the damping of hypersound

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1764-1773

TOPIC TAGS: hypersound, ~~scattering~~, Rayleigh scattering, Brillouin <sup>300</sup>scattering, ~~fluctuation~~, ~~irreversible~~ thermodynamics, laser, *hypersonic flow*

ABSTRACT: An expression is derived for the relaxation time of bulk viscosity on the basis of the hydrodynamic and relaxation theories for sound propagation in a liquid. This makes it possible to determine the relaxation time from measurements of sound absorption and sound dispersion and to check the validity of the simplest relaxation theory with one relaxation time. In the experiments conducted, an He-Ne laser was used to investigate the spontaneous Brillouin scattering in the following liquids:  $C_6H_6$ ,  $CS_2$ ,  $CHCl_3$ ,  $C_6H_5CH_3$ , and  $CH_2Cl_2$ . The hypersound velocity in these liquids at a frequency of  $4 \times 10^8$  cps was determined from the distances between the peaks of the Brillouin components, while the coefficient of absorption was determined from their

Card 1/2

L 13271-66

ACC NR: AP6002715

linewidths. The experimental data for some liquids agreed with the results of the relaxation theory involving one relaxation time. The relative intensities of the Brillouin components were measured and compared with theoretical data. Orig. art. has: 10 formulas, 4 tables, and 5 figures. [CS]

SUB CODE: 20/ SUBM DATE: 21Jul65/ ORIG REF: 012/ OTH REF: 012/ ATD PRESS: 4/8

Card

2/2



TUMANOV, YU.

Rumania - Canals

Danube - Black Sea. Mol. kolkh. 19 no.5, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

TUMANOV, Yu.A., inzh.

Heller system condensation cooling installation. Teploenergeti-  
ka 7 no.2:80-82 F '60. (MIRA 13:5)  
(Steam turbines--Cooling)

BEEMAN, L.D., doktor tekhn. nauk, prof.; TUMANOV, Yu.I., inzh.

Effect of the velocity of steam on the mechanism and intensity  
of heat exchange with pellicular condensation on a horizontal  
pipe. Energomashinostroenie 10 no.5:24-28 My '64.

(MIRA 1748)

BERMAN, L.D., doktor tekhn.nauk, prof.; TUMANOV, Yu.A., inzh.

Heat emission during filmy condensation of stationary steam in a horizontal pipe. Izv. vys. ucheb. zav.; energ. 5 no.9:86-93 S '62.

1. Vsesoyuznyy ordena Trudovogo Krasnogo Znameni teplotekhnicheskiiy institut imeni F.E.Dzerzhinskogo. Predstavlena otdeleniyem turbin i teplofikatsii.

(Steampipes)

(Steam)-

(Heat—Transmission)

GALKIN, N.P.; TUMANOV, Yu.N.; TARASOV, V.I.; SHISHKOV, Yu.D.

Zirconium tetrafluoride vapor pressure. Zhur.neorg.khim. 8 no.9:  
2021-2023 S '63. (MIRA 16:10)

S/075/62/017/005/005/007  
I033/I233

AUTHORS: Moiseyeva, L.M. and Tumanov, Yu. N.

TITLE: Spectrophotometric determination of uranium in the presence of molybdenum and vanadium with the aid of thiocyanate

PERIODICAL: Zhurnal analiticheskoy khimii, v.17, no. 5, 1962, --  
595-597

TEXT: All published methods of determination of U by means of thiocyanate require the preliminary removal of Mo and V. In this work the possibility of determination of U in the presence of small quantities of Mo and V was investigated. At pH 2-3 the optical

Card 1/2

S/075/62/017/005/005/007  
I033/I233

Spectrophotometric determination....

density (O.D.) of uranyl thiocyanate is 3-4 times higher than that of Mo and V. The O.D. of all complexes increases with CNS concentration. The greatest difference is observed for 80 g/l of  $\text{NH}_4\text{CNS}$ . Concentrations up to 3 g/l of ascorbic acid, used as a reducing agents do not affect the O.D. The O.D decreases with increase of the concentration of the  $\text{NaCOOH}$  medium. Beer's law is obeyed for the U concentration range of 0-12 mg/l. 1-10 mg/l may be determined in the presence of 5 ml/l of Mo or V, 1-2 g /l of Fe, 0.04 g/l of Ni, 0.2 g/l of Co, 0.03 g/l of Cu and 0.01 g/l of Pb, with an accuracy of 10%. There are 4 figures and 3 tables. ✓

SUBMITTED: July 20, 1961

Card 2/2

MOISEYEVA, L.M.; TUMANOV, Yu.N.

Spectrophotometric determination of uranium by means of thiocyanate  
in the presence of molybdenum and vanadium. Zhur.anal.khim. 17  
no.5:595-597 Ag '62. (MIRA 16:3)  
(Uranium--Spectra) (Thiocyanates)



TUMANOV, Yuriy Pavlovich

[Through the eyes of foreign guests] Glazami zarubezhnykh  
gostei. Stalingrad, Stalingradskoe knizhnoe izd-vo, 1959.  
67 p. (MIRA 14:4)  
(Stalingrad--Description)

TUMANOV, Yuriy Petrovich; KHAVINSON, Yu.I., red.

[Working time and leisure] Rabochee i svobodnoe vremia.  
Irkutsk, Vostochno-Sibirskoe knizhnoe izd-vo, 1964. 94 p.  
(MIRA 18:2)

TUMANOV, Yu. V.

Cand Tech\_Sci - (diss) "Study of non-sprayer absorber with perforated oroshayemaya Venturi tube." Moscow, 1961. 15 pp;  
(Ministry of Higher and Secondary Specialist Education RSFSR,  
Moscow Order of Lenin Chemical Technology Inst imeni Mendeleyev);  
150 copies; price not given; (KL, 7-61 sup, 247)

ZAREMBO, K.S.; TUMANOVA, A.A.; OKHRIMENKO, Ye.P.

Studying the process of obtaining oil fogs for anticorrosion  
protection of inside surfaces of pipes for gas pipelines. Trudy  
VNIIGAZ no.5:323-337 '59. (MIRA 12:9)  
(Pipe, Steel) (Corrosion and anticorrosives)

ZAREMBO, K.S.; PAVLOVA, N.M.; TUMANOVA, A.A.

General data of using gas pipelines placed at reduced depth.  
Trudy VNIIGAZ no.13:160-168 '61. (MIRA 14:12)  
(Gas, Natural--Pipelines)

TUMANOKA H. P.

11(2)

PHASE I BOOK EVALUATION

807/2253

Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnykh gazov

Barabokha I. *Eksploativnyy gazovyyh mestonahozhdeniy, transport gazov (Development and exploitation of gas fields, transportation of gas)*, Moscow, Gostoyzdat, 1979, 352 p. (Series: Itz: Trudy, vop. 5/13/) Entries ally inserted. 1,500 copies printed.

Sponsoring Agency: Otkrytoye upravleniye gazovoy promyshlennosti pri Sovetskom Ministerstve ENER.

Eds.: Ye. M. Minakly and V.M. Babben; Ence. Ed.: M.P. Martynov; Tech. Ed.: A.S. Polonska.

REMARKS: This collection of articles is intended for scientists, engineers, and technicians associated with the gas industry.

CONTENTS: The articles discuss the development of gas fields, natural gas recovery, gas transportation, and subsurface gas conservation. Gas field operating conditions are analyzed from the commercial point of view. The author notes that the specific geological conditions prevailing in the USSR make the application of gas extraction methods of the type used in the USA almost always advantageous. Individual articles discuss problems of the development of gas fields with narrow oil containing fringes, the theory of gas inflow, the study of gas well performance, gas filtration dynamics, and the study of gas condensates. A number of articles are devoted to the construction and stabilization of gas flow in pipelines, and discuss theoretical problems connected with the performance of gas ejectors and compressors. The author also deals with corrosion of the inner surface of gas pipelines. Calculations made by the authors are supported by mathematical calculations. So personalities are mentioned. References accompany each article.

On the Automodel Determination of Gas Flow in Pipelines	201
Bradenovich, I.Ye., and I.A. Muraviev. Some Calculations on Gas Pipelines With an Unstabilized Gas Flow	214
Rodionovich, I.Ye., and V.A. Kuznetsov. Accurate Determination of the Gas Pipeline Throughput Capacity	220
Rodionovich, I.Ye., and I.P. Babayev. Effect of Connecting Rings on the Throughput Capacity of a Gas Pipeline	236
Gordienko, Z.I. On the Theory of Unstabilized Gas Stream Flowing Under Uniform Pressure Through a Long Section of Pipeline	244
Portnov, I.G. Steadiness of Stationary Operating Conditions of a Supersonic Gas Ejector	251
Portnov, I.G., and G.A. Zolov. Successive Operations of Gas Ejectors Under Stationary Supercritical Conditions	267
Rodionovich, I.A. Study of the Acoustic Supercharging of a Piston Compressor, Carried Out With the Aid of a Variable Volume Resonator	285
Rodionovich, I.A., K.S. Zakharenko, and Ye.P. Oshchepkova. Study of the Destructive Corrosion of the Inner Surface of the Gas-Line Fuel Pipes	304
Zakharenko, K.S., Ye.P. Oshchepkova, and A.A. Pashkov. Study of the Process of Oil Spray Used for the Anticorrosive Protection of the Inner Surface of Gas Pipelines	323
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TUMANOVA, A. F.

"Immediate and Long-Range Results of the Treatment of Malignant Tumors of the Ovaries by Surgical and Combination Methods." Cand Med Sci, Gor'kiy Medical Inst, Gor'kiy, 1954. (RZhBiol, No 4, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

BUYKO, G.N.; SHVARTS, A.G.; TUMANOVA, A.I.

Tires made from synthetic polyisoprene rubber. Kauch.i rez.  
16 no.5:1-11 Ky '57. (MLRA 10:7)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Automobiles--Tires) (Isoprene)



LAVRENT'YEV, V.I. Prinimali uchastiye: POL'SHINSKIY, V.V., starshiy nauchnyy sotrudnik; AKOPOVA, A.A., starshiy nauchnyy sotrudnik; SHAYKHUTDINOVA, L.K.; inzh.; SHAGEYEVA, L.A.; inzh.; TUMANOVA, A.M., preparator; STAROSTIN, P.A., inzh.; BALAKHONOV, A.P., motorist; ARTEM'YEV, V.G., motorist.

Using the heavy residual fractions of Tatar sour crude as a fuel for gas turbines. Nefreper. i neftekhim. no.4:27-34 '63  
(MIRA 17:7)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut.

**"APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1"**

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757420013-1

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757420013-1"

ROM-BUGOSLAVSKAYA, Ye.S.; TUMANOVA, A.N.

Clinical variations of hemorrhagic vasculitis. Kaz.med.  
zhur.m.3:50-52 My-Je'63. (MIRA 16:9)

1. Terapevticheskiye otdeleniya 32-y bol'nitsy (glavnyy  
vrach - I.S.Yefimov) i 12-y bol'nitsy (glavnyy vrach -  
A.I.Kirichenko) Khar'kova.  
(PURPURA (PATHOLOGY))

TUMANOVA, A.V.; GUBANOV, V.A.; DOLGOPOL'SKIY, I.M.

Reactions of silver salt of perfluoromethoxyperfluoropropionic acid with halogens. Zhur. ob. khim. 35 no.3:587-588 Mr '65.

Characteristics of the polarization of the double bond of perfluoromethylperfluorovinyl ether. Ibid.:588

(MIRA 18:4)

**"APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1"**

**"APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1**

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001757420013-1"**

*TUMANOVA, A.V.*

PETROV, A.A.; TUMANOVA, A.V.

Conjugated systems. Part 71. Dimerization of fluoroprene.

Zhur.ob.khiz. 26 no.12:3314-3318 D '56.

(MLBA 10:7)

(Fluoroprene) (Polymerization)



TUMANOVA, A.V.

PETROV, A.A.; TUMANOVA, A.V.

Conjugated systems. Report No.68: Diene synthesis in presence of fluoroprene. Part 1: Condensation of fluoroprene with  $\alpha$ ,  $\beta$ -unsaturated aldehydes and ketones. Zhur. ob. khim. 26 no.10:2744-2749 0 '56. (MIRA 11:2)

(Fluoroprene)

"APPROVED FOR RELEASE: 03/14/2001

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TITLE: The Synthesis of Ethyl- and 2-Propylbutadiene-1,3 (Sintez  
2-etil-i 2-propilbutadiyenov-1,3)

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ABSTRACT: Based on their experience collected in the previous paper  
(Ref 7) the authors carried out again the synthesis of butadiene  
from  $\alpha$ -chloro-methyl allene. When corresponding magnesium  
alkyl halides act, upon it, 2-ethyl- and 2-propyl butadienes-1,3  
are obtained. The yield of alkyl butadienes under the most  
favorable conditions amounted to a maximum of 26%, as side  
reactions took place. A dimer of propylbutadiene-1,3; n-hexane  
and hexadiene-1,3 was separated as side product. Besides a  
considerable amount of polymers was obtained which point to a  
condensation of two molecules of  $\alpha$ -chloro methyl allene under  
the formation of octatetraene as well as to its subsequent  
isomerization to a compound with a system of double compounds  
which again polymerizes (reaction scheme). The properties of  
the synthesized alkyl butadienes are mentioned in the table.

Card 1/2

The Synthesis of Ethyl- and 2-Propylbutadiene-1,3

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According to Kaufmann (Kaufman) by titration with bromine the authors determined that these compounds exhibit an unsaturated character. To prove that the alkyl butadienes have a diene structure they were condensed with maleic acid anhydride in benzene solution. The melting points of the products obtained from it are also shown in the table. There are 1 table and 9 references, 3 of which are Soviet.

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1. Butadienes--Synthesis
2. Condensation reactions

Card 2/2